

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference IPB/129094	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416	
International application No. PCT/DK2004/000617	International filing date (day/month/year) 16.09.2004	Priority date (day/month/year) 23.12.2003		
International Patent Classification (IPC) or national classification and IPC INV. B01J2/04 B01D1/18				
Applicant NIRO AS et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of sheets, as follows:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the report</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>				
Date of submission of the demand 05.10.2005	Date of completion of this report 30.05.2006			
Name and mailing address of the International preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer  Gruber, M Telephone No. +31 70 340-9824			
				

INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY

34070  
IAP20 Rec'd PCT/PTO 22 JUN 2006

International application No.  
PCT/DK2004/000617

**Box No. I Basis of the report**

1. With regard to the language, this report is based on
  - the international application in the language in which it was filed
  - a translation of the international application into , which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3(a) and 23.1(b))
    - publication of the international application (under Rule 12.4(a))
    - international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the elements\* of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-23 as originally filed

**Claims, Numbers**

1-31 as originally filed

**Drawings, Sheets**

15-55 as originally filed

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/DK2004/000617

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims 2-7,10,11,14-17,19,21-27,29-31
	No:	Claims 1,8,9,12,13,18,20,28
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-31
Industrial applicability (IA)	Yes:	Claims 1-31
	No:	Claims

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/DK2004/000617

**Re Item V.**

- 1 The following document is referred to in this communication:

D2: PATENT ABSTRACTS OF JAPAN vol. 0050, no. 79 (C-056), 23 May 1981 (1981-05-23) & JP 56 026501 A (CHUO KAKOKI KK), 14 March 1981 (1981-03-14)

- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1,8,9,12,13,18,20, and 28 is not new in the sense of Article 33(2) PCT.

In D2, an ultrasonic field is generated around a tube (54) through which a liquid is passed. At the outlet (55), the liquid exits tube (54) in the form of uniform sized droplets. The droplets are then carried by a gas which is introduced at (A). This gas is also used for generating the ultrasonic field via pressure exertion on the piston like tube (54). With the documentation available at present, it is not possible to identify whether the droplets are created by the ultrasonic effect only or additionally by a possible atomizing action of gas (A).

D2 is regarded novelty destroying for the subject matter of claims 1,8,9,12,13, 18,20, and 28.

- 3 It is, at present, not clear to which extent the subject matter of those claims not addressed under item 2 causes unexpected or surprising effects with respect to what is disclosed in the above mentioned prior art. Therefore, no inventive activity can be acknowledged for the time being (Art. 33(3) PCT).

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